

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

International Application Number	International Filing Date	Priority Date Claimed
PCT/EP2002/013328	25 November 2002	25 November 2002
U.S. Serial Number	Applicant(s) for DO/US	
10/534,606	Klaus LORENZ, et al.	
Title of Invention		
Defoaming Agent for Cementitious Composition		
Docket No. MBI-0466		

Mail Stop PCT

Commissioner For Patents

P.O. Box 1450

Alexandria, VA 22313-1450

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Jean R Barris

(type or print name of person signing paper)

Jean R Barris

(signature of person mailing paper)

2-22-2006

(date)

TRANSMITTAL SHEET

Enclosed is:

Transmittal Sheet with Certificate of Mailing and Authorization to Charge Deposit Account

Notification of Missing Requirements Under 35 USC 371 in the United States

Designated/Elected Office (DO/EO/US)

Completion of Filing Requirements

Statement By Attorney That Papers Attached to Declaration Are a Copy of Those Filed in

USPTO to Get a Filing Date

Declaration/Power Attorney with Specification, Claims, Abstract,

Preliminary Amendment Attached

Replacement Data Sheet

Check in the Amount of \$250.00

Return Receipt Post Card

AUTHORIZATION TO CHARGE DEPOSIT ACCOUNT

In the event an additional fee is applicable to the filing of this document and the required fee is not enclosed, or the fee submitted is insufficient, the Commissioner is hereby authorized to charge any fees for Docket No. MBI-0466 that might be required to effect the filing of this (these) documents to Account No. 50-3275. This certificate is submitted in duplicate.

Respectfully submitted,

Joseph G. Curatolo

Joseph G. Curatolo, Esq. (Reg. No. 28,837)

Curatolo Sidoti Co., LPA

24500 Center Ridge Road Suite 280

Cleveland, OH 44145

Telephone: 440.808.0011

Facsimile: 440.808.0657

Customer No. 23575

Attorney for Applicants

Date 2-22-2006

The PTO did not receive the following  
listed item(s) Replacement Data  
Sheet document.

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

International Application Number	International Filing Date	Priority Date Claimed
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Joan E. Barnes  
(type or print name of person signing paper)

Joan E. Barnes  
(signature of person mailing paper)

9-22-2002  
(date)

**STATEMENT BY ATTORNEY THAT PAPERS ATTACHED TO DECLARATION  
ARE A COPY OF THOSE FILED IN USPTO TO GET A FILING DATE**

I, Joseph G. Curatolo  
Curatolo Sidoti Co., LPA  
24500 Center Ridge Road, Suite 280  
Cleveland, Ohio 44145

Reg. No. 28,837  
Phone No. 440.808.0011

state I am the attorney for this application and that I have reviewed the

- 1 page of abstract
- 17 pages of specification
- 2 pages of claims
- 8 pages of preliminary amendment

as shown in my files to be papers I filed in respect to the above-identified application and have compared them to the papers attached to the declaration(s) of

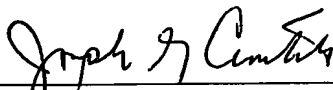
Klaus Lorenz  
Tomomi Sugiyama  
Minoru Yaguchi  
Gerhard Albrecht

for Defoaming Agent for Cementitious Composition

that accompany this statement, and I declare that these papers attached to the declaration(s) are a copy of the specification as filed and any amendment thereto that I filed in the USPTO in order to obtain a filing date for this application by:

- ☐ [ ] depositing by hand at the USPTO
- ☐ [ ] mailing to the USPTO
- ☒ [X] mailing to the USPTO by Express Mail bearing Mailing Label Number EV468904053US on May 11, 2005.

Respectfully submitted,



\_\_\_\_\_  
Joseph G. Curatolo, Esq. (Reg. No. 28,837)

Date 2-22-2006

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#4

International Application Number	International Filing Date	Priority Date Claimed
PCT/EP2002/013328	25 November 2002	25 November 2002
U.S. Serial Number	Applicant(s) for DO/US	
10/534,606	Klaus LORENZ, et al.	
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Joan R Barnes  
 (type or print name of person signing paper)

Joan R Barnes  
 (signature of person mailing paper)

2-22-2006  
 (date)

**COMPLETION OF FILING REQUIREMENTS  
 FOR INTERNATIONAL APPLICATION ENTERING NATIONAL  
 STAGE IN U.S. DESIGNATED OFFICE (DO/US) UNDER 35 USC §371**

I. This replies to the Notification of Missing Requirements Under 35 USC 371 (Form PCT/DO/EO/905) in the United States Designated/Elected Office (DO/EO/US) mailed November 29, 2005.

- ☒ A copy of the Notification of Missing Requirements under 35 USC §371 and 37 CFR 1.494 in the United States Designated/Elected Office is enclosed (Form PCT/DO/EO/905).

**DECLARATION OR OATH**

- II. (a) ☒ No executed original declaration or oath was filed. Enclosed is the original executed declaration or oath for this application.

**OR**

- (b) ☐ The declaration or oath that was filed was determined to be defective. A new original oath or declaration is attached.

Attached is a

- (c) ☐ Statement by a registered attorney that the application filed in the USPTO is the application which the inventor executed by signing the declaration.
- (d) ☒ Statement that the "attached" specification is a copy of the specification and any amendments thereto which were filed in the USPTO to obtain the filing date.

#### AMENDMENT

- III. ☐ An amendment in accordance with 37 CFR §1.121 is attached.
- ☐ The attached amendment

#### TRANSMITTAL OF ENGLISH TRANSLATION OR NON-ENGLISH LANGUAGE PAPERS

- IV. ☐ Submitted herewith is a verified English translation of the non-English language application papers as originally filed. It is requested that this translation be used as the copy for examination purposes in the USPTO.

#### SMALL ENTITY STATUS

V. Applicant is

- [ ] a small entity  
verified statement:
- [ ] enclosed
- [ ] already filed in application
- [X] other than a small entity

#### COMPLETION FEES

VI.

1. Filing Fee

- ☐ original patent application (37 CFR 1.16(a)- \$790; Small entity - \$395) \$ 0.00
- ☐ Design application (37 CFR 1.16(f) \$330; small entity - \$165) \$ 0.00

2. Fees for claims

- ☐ each independent claim in excess of 3  
(38 CFR 1.16(b)-\$82; small entity -\$41) \$ 0.00
- ☐ each claim in excess of 20 (37 CFR 1.16(c)-\$22;  
small entity-\$11) \$ 0.00
- ☐ multiple dependent claim(s) (37 CFR 1.16(d) - \$270;  
small entity- \$135) \$ 0.00

3. Surcharge Fees

- ☐ late payment of filing fee  
and/or
- ☒ late filing of original declaration or oath (37 CFR 1.16(e) - \$130;  
small entity - \$65); \$ 130.00

4. ☐ Petition and fee for filing by other than all the inventors or person not the  
inventor (37 CFR 1.17(h) and 1.47 - \$130) \$ 0.00

5. ☐ Fee for processing an application filed with a specification in a non-  
English language (37 CFR 1.17(k) and 1.52(d)-\$130) \$ 0.00

6. ☐ Fee for processing and retention of application (37 CFR 1.21(l) and  
1.53(d)-\$300) \$ 0.00

02/27/2006 NKAYPAGH 00000110 10534606

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130.00 0P

Total completion fees

\$ 130.00

**EXTENSION OF TIME**

VII.

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

- (a) ☒ Applicant petitions for an extension of time, the fees for which are set out  
in 37 CFR 1.17(a)-(d), for the total number of months checked below:

<u>Extension months</u>	<u>Fee for other than small entity</u>	<u>For small entity</u>
<input checked="" type="checkbox"/> one month	\$ 120.00	\$ 60.00
<input type="checkbox"/> two months	\$ 450.00	\$ 225.00
<input type="checkbox"/> three months	\$ 1,020.00	\$ 510.00
<input type="checkbox"/> four months	\$ 1,590.00	\$ 795.00
<input type="checkbox"/> five months	\$ 2,160.00	\$ 1,080.00
Extension Fee		\$ <u>120.00</u>

If an additional extension of time is required please consider this a petition therefor.

Based on the extension requested in this petition, the extended period for response will expire on February 28, 2006.

or

- (b) ☐ Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

6. Fee Payment

Attached is a check in the amount of \$ 250.00

7. Fee deficiency

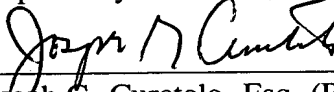
☒ If any additional extension and/or fee is required for this case MBJ-0466, charge Deposit Account No. 50-3275. A duplicate of this transmittal is attached.

02/27/2006 MKAYPAGH 00000110 10534606

02 FC:1251

120.00 DP

Respectfully submitted,



Joseph G. Curatolo, Esq. (Reg. No. 28,837)  
Curatolo Sidoti Co., LPA  
24500 Center Ridge Road, Suite 280  
Cleveland, OH 44145  
Telephone: 440.808.0011  
Customer No. 23575  
Attorney for Applicants

2-22-2006  
Date

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: LORENZ, Klaus, et al.

Docket No.: MBJ-0466

Serial No: New United States National Phase  
Application

Examiner: N/A

*copy*

International Application No. PCT/EP2002/013328

International Filing Date: 25.11.2002

For: Defoaming Agent for Cementitious Composition

**Mail Stop PCT**

**COMMISSIONER FOR PATENTS**

**P. O. Box 1450**

**Alexandria, VA 22313-1450**

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*Joan R. Barnes*

(type or print name of person signing paper)

*Joan R. Barnes*

(signature of person mailing paper)

*5-11-2005*

(date)

**PRELIMINARY AMENDMENT**

Dear Sir:

**INTRODUCTORY COMMENTS**

Before the calculation of fees and the first Office Action on the merits, please amend the present application as follows.

The amendment to the specification is on page 2.

The amendments to the claims begin on page 3.

The remarks are on page 8.



## **AMENDMENTS TO THE SPECIFICATION**

Before the first sentence on page 1, please insert:

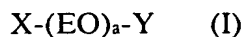
### **CROSS REFERENCE TO RELATED APPLICATIONS**

This application is a national stage application of International Application No. PCT/EP2002/013328 filed 25 November 2002, from which application priority is claimed.

## AMENDMENTS TO THE CLAIMS

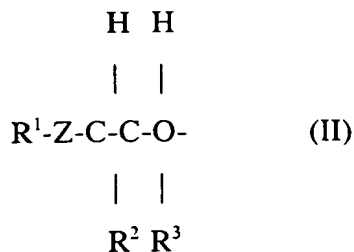
This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A defoaming agent for cementitious compositions, ~~obtained by mixing~~ comprising a mixture of at least one polyethylene oxide derivative and at least one nonionic defoaming agent, wherein the polyethylene oxide derivative has at one end a hydrophobic group with at least one of a branched structure and an unsaturated bond, and at the other end an anionic group, wherein the unsaturated bond is optionally a double bond.
2. (Cancelled)
3. (Currently Amended) The defoaming agent according to claim 1 ~~or claim 2~~, wherein the polyethylene oxide derivative is a compound expressed by formula I:



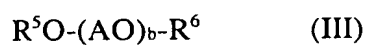
wherein X is a hydrophobic group comprising at least one of a branched structure and an unsaturated bond; Y is an ~~anion~~ anionic group; EO is  $-\text{CH}_2\text{CH}_2\text{O}-$  and a is an integer from 6 to 100.

4. (Original) The defoaming agent according to claim 3 wherein a is an integer from 15 to 60.
5. (Currently Amended) The defoaming agent according to ~~any one of claims~~ claim 1 to 4, wherein the hydrophobic group comprising at least one of a branched structure and an unsaturated bond is expressed by formula II:



wherein Z is O or an amine; R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> are each independently alkyl or phenyl, naphthyl, alkenyl, alkylene oxide with 2 to 4 carbon atoms or any derivatives thereof, and R<sup>2</sup> and R<sup>3</sup> may also be each independently H, with the proviso that R<sup>1</sup> is not alkyl when R<sup>2</sup> and R<sup>3</sup> are both H.

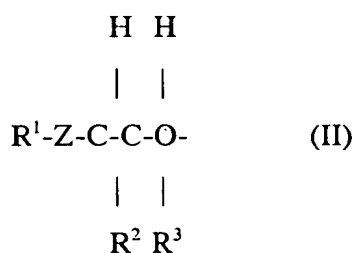
6. (Currently Amended) The defoaming agent according to ~~any one of claims~~ claim 1 to 5, wherein the ~~anion~~ anionic group is -SO<sub>3</sub>M, -(CH<sub>2</sub>CH<sub>2</sub>)OSO<sub>3</sub>M, -R<sup>4</sup>COOM (wherein R<sup>4</sup> is -C<sub>m</sub>H<sub>2m</sub>- (in which m is an integer 10 > m > 0 and preferably 1 or 2) or a phenyl group), -PO<sub>3</sub>M or -CO(CH<sub>2</sub>)<sub>n</sub>COOM (wherein M is Na salt, K salt, Ca salt, Mg salt, NH<sub>4</sub> salt or H, n is 2 or 3).
7. (Currently Amended) The defoaming agent according to ~~any of the claims~~ claim 1 to 6 wherein the nonionic defoaming agent is expressed by formula III:



wherein R<sup>5</sup> and R<sup>6</sup> are each independently an aliphatic hydrocarbon with 10 to 25 carbon atoms, an alkyl group with 1 to 5 carbon atoms or H; AO is a block polymer and/or a random polymer constituted of alkylene oxide with 2 to 3 carbon atoms and b is an integer from 5 to 500.

8. (Currently Amended) The defoaming agent according to ~~any one of claims~~ claim 1 to 7 ~~obtained by mixing~~ wherein the polyethylene oxide derivative and the nonionic defoaming agent are at a ratio in the range of 20:80 to 60:40 (wt%).

9. (Original) The defoaming agent according to claim 7, wherein the nonionic defoaming agent, when converted to polyethylene glycol, has a weight average molecular weight in the range from 300 to 30,000 and the weight ratio of the ethylene oxide in said molecular weight is in the range of 5 to 80%.
10. (Currently Amended) A water-reducing composition comprising a blend of a polycarboxylate-type high performance air-entraining (AE) water-reducing agent and a defoaming agent according to ~~any one of claims~~ claim 1 ~~[[9]]~~.
11. (Currently Amended) A method of defoaming a cementitious composition by the addition to the composition of a defoaming agent according to ~~any one of claims~~ claim 1 ~~[[9]]~~.
12. (New) The defoaming agent of claim 6 wherein m is 1 or 2.
13. (New) The defoaming agent according to claim 3, wherein the hydrophobic group comprising at least one of a branched structure and an unsaturated bond is expressed by formula II:

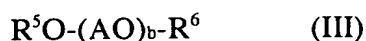


wherein Z is O or an amine; R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> are each independently alkyl or phenyl, naphthyl, alkenyl, alkylene oxide with 2 to 4 carbon atoms or any derivatives thereof, and R<sup>2</sup> and R<sup>3</sup> may also be each independently H, with the proviso that R<sup>1</sup> is not alkyl when R<sup>2</sup> and R<sup>3</sup> are both H.

14. (New) The defoaming agent according to claim 3, wherein the anionic group is -SO<sub>3</sub>M, -(CH<sub>2</sub>CH<sub>2</sub>)OSO<sub>3</sub>M, -R<sup>4</sup>COOM (wherein R<sup>4</sup> is -C<sub>m</sub>H<sub>2m</sub>- (in which m is an

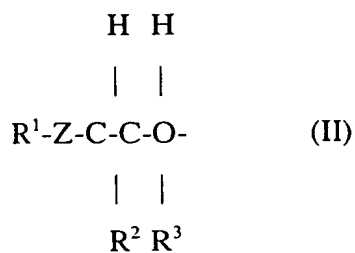
integer  $10 > m > 0$ ) or a phenyl group),  $-\text{PO}_3\text{M}$  or  $-\text{CO}(\text{CH}_2)_n\text{COOM}$  (wherein M is Na salt, K salt, Ca salt, Mg salt,  $\text{NH}_4$  salt or H, n is 2 or 3).

15. (New) The defoaming agent of claim 14 wherein m is 1 or 2.
16. (New) The defoaming agent according to claim 3 wherein the nonionic defoaming agent is expressed by formula III:



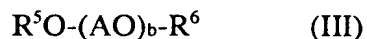
wherein  $\text{R}^5$  and  $\text{R}^6$  are each independently an aliphatic hydrocarbon with 10 to 25 carbon atoms, an alkyl group with 1 to 5 carbon atoms or H; AO is a block polymer and/or a random polymer constituted of alkylene oxide with 2 to 3 carbon atoms and b is an integer from 5 to 500.

17. (New) A water-reducing composition comprising a blend of a polycarboxylate-type high performance air-entraining (AE) water-reducing agent and a defoaming agent according to claim 3.
18. (New) A method of defoaming a cementitious composition by the addition to the composition of a defoaming agent according to claim 3.
19. (New) The defoaming agent according to claim 4, wherein the hydrophobic group comprising at least one of a branched structure and an unsaturated bond is expressed by formula II:



wherein Z is O or an amine; R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> are each independently alkyl or phenyl, naphthyl, alkenyl, alkylene oxide with 2 to 4 carbon atoms or any derivatives thereof, and R<sup>2</sup> and R<sup>3</sup> may also be each independently H, with the proviso that R<sup>1</sup> is not alkyl when R<sup>2</sup> and R<sup>3</sup> are both H.

20. (New) The defoaming agent according to claim 4, wherein the anionic group is -SO<sub>3</sub>M, -(CH<sub>2</sub>CH<sub>2</sub>)OSO<sub>3</sub>M, -R<sup>4</sup>COOM (wherein R<sup>4</sup> is -C<sub>m</sub>H<sub>2m</sub>- (in which m is an integer 10 > m > 0) or a phenyl group), -PO<sub>3</sub>M or -CO(CH<sub>2</sub>)<sub>n</sub>COOM (wherein M is Na salt, K salt, Ca salt, Mg salt, NH<sub>4</sub> salt or H, n is 2 or 3).
21. (New) The defoaming agent according to claim 4 wherein the nonionic defoaming agent is expressed by formula III:



wherein R<sup>5</sup> and R<sup>6</sup> are each independently an aliphatic hydrocarbon with 10 to 25 carbon atoms, an alkyl group with 1 to 5 carbon atoms or H; AO is a block polymer and/or a random polymer constituted of alkylene oxide with 2 to 3 carbon atoms and b is an integer from 5 to 500.

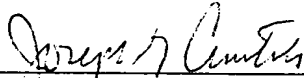
## REMARKS

This application is a national stage application of International Application No. PCT/EP2002/013328 filed 25 November 2002, from which application priority is claimed.

Amendments to the claims have been made to place the claims in U.S. format. Applicant submits that the amendments do not narrow the scope of the claims, but rather are for purposes of clarification and proper format.

Applicant respectfully requests entry of the above claims before the fees are calculated and earnestly solicits a formal Notice of Allowability directed to claims 1 and 3-21.

Respectfully submitted,



Joseph G. Curatolo, Esq. (Reg. No. 28,837)  
Curatolo Sidoti Co., LPA  
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Telephone: 440.808.0011  
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Attorney for Applicants

Customer No. 23575

5-11-2005

Date